AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. — 9. **(Canceled)**

10. **(Currently amended)** A method for isolating one or more different-sequence polynucleotides from a mixture, the method comprising:

(a) flowing the mixture through a flow path containing a plurality of solid supports which are located in series in the flow path, such that the mixture flows serially through each of the plurality of solid supports, each support having bound thereto a sequence-specific capture agent complementary to a different-sequence polynucleotide, under conditions effective to specifically bind different-sequence polynucleotides to corresponding sequence-specific capture agents on one or more of the supports~~,~~;

(b) after said specific binding, releasing bound polynucleotides from a selected support by altering a physical property of that support while leaving unaltered the same physical property of at least one other of the supports~~,~~; and

(c) eluting the released polynucleotides through the flow path such that the eluted polynucleotides can be isolated in separated form.

11. **(Original)** The method of claim 10, wherein the physical property is temperature.

12. **(Original)** The method of claim 11, wherein said releasing is accomplished by heating a first solid support while the temperatures of the other supports in the plurality of supports remain unchanged, such that polynucleotides are specifically eluted from the first solid support and are isolated in separated form.

13. **(Original)** The method of claim 12, wherein said altering further comprises selectively heating a second solid support to release bound polynucleotides therefrom, to allow preferential elution of the polynucleotides released from the second solid support.

14. **(Original)** The method of claim 13, wherein heating of the first and second supports is performed simultaneously, and the polynucleotides released thereby are eluted in separate form, without mixing with each other.

15. **(Original)** The method of claim 10, wherein the physical property is voltage potential.

16. **(Original)** The method of claim 10, wherein (i) the polynucleotide mixture comprises a plurality of different polynucleotide populations, each different polynucleotide population comprising a plurality of different polynucleotides that contain a distinct sequence associated with that population, and (ii) different sequence-specific capture agents on the different solid supports are complementary to different polynucleotide populations in the mixture.

17. **(Original)** The method of claim 10, wherein the polynucleotide mixture comprises a plurality of sequencing ladders.

18. **(Original)** The method of claim 10, wherein the polynucleotide mixture comprises a plurality of PCR products.

19. **(Original)** The method of claim 10, wherein the polynucleotide mixture comprises a plurality of ligation products.

20. **(Original)** The method of claim 10, wherein the different-sequence polynucleotides in the mixture include recovery tags for which the capture agents are complementary.

21. **(Currently amended)** A method for isolating one or more different-sequence polynucleotides from a mixture, the method comprising:

(a) flowing the mixture through a flow path containing a plurality of solid supports which are located in series in the flow path, such that the mixture flows serially through each of the plurality of solid supports, each support having bound thereto a sequence-specific capture agent complementary to a different-sequence polynucleotide, under conditions effective to specifically bind different-sequence polynucleotides to corresponding sequence-specific capture agents on one or more of the supports,

(b) after said specific binding, releasing bound polynucleotides from a selected support by altering a physical property of that support while leaving unaltered the same physical property of at least one other of the supports, wherein the physical property is temperature, and wherein said releasing is accomplished by heating a first solid support; and

(c) eluting the released polynucleotides through the flow path such that the eluted polynucleotides can be isolated in separated form.

22. **(Previously presented)** The method of claim 21, wherein said altering further comprises selectively heating a second solid support to release bound polynucleotides therefrom, to allow preferential elution of the polynucleotides released from the second solid support.

23. **(Previously presented)** The method of claim 22, wherein heating of the first and second supports is performed simultaneously, and the polynucleotides released thereby are eluted in separate form, without mixing with each other.

24. **(Previously presented)** The method of claim 21, wherein (i) the polynucleotide mixture comprises a plurality of different polynucleotide populations, each different polynucleotide population comprising a plurality of different polynucleotides that contain a distinct sequence associated with that population, and (ii) different sequence-specific capture agents on the different solid supports are complementary to different polynucleotide populations in the mixture.

25. **(Previously presented)** The method of claim 21, wherein the polynucleotide mixture comprises a plurality of sequencing ladders.

26. **(Previously presented)** The method of claim 21, wherein the polynucleotide mixture comprises a plurality of PCR products.

27. **(Previously presented)** The method of claim 21, wherein the polynucleotide mixture comprises a plurality of ligation products.

28. **(Previously presented)** The method of claim 21, wherein the different-sequence polynucleotides in the mixture include recovery tags for which the capture agents are complementary.